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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|----------------------|------------------|
| 10/061,147 | 02/01/2002 | Ulrich Muller | 225479US0 | 9167 |
| 22850 | 7590 | 12/17/2004 | EXAMINER | |
| OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | LAWRENCE JR, FRANK M | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1724 | |

DATE MAILED: 12/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/061,147

Applicant(s)

MULLER ET AL.

Examiner

Frank M. Lawrence

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-6, 8-10 and 13-15 is/are allowed.
- 6) ☒ Claim(s) 11, 12 and 16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: The reference to claim 10 in line 16 of page 9 is unclear and should be avoided because the claim numbers and content can be changed during prosecution.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 11 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Yaghi '508.
4. Yaghi '508 teaches a crystalline metal-organic microporous material comprising an aromatic polycarboxylic acid bound to a metal ion such as copper in a solvent with a templating agent (col. 4, line 39 to col. 5, line 43, col. 8, lines 41-49, col. 12, lines 57-65, claims 4-8). The material is disclosed as being useful in separation processes in which zeolites have been used, such as in the adsorption of molecules or ions from gases (col. 1, lines 16-33, col. 3, line 60 to col. 4, line 4, col. 17, lines 40-45).
5. Claims 11, 12 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by the EP '608.

6. EP '608 teaches a gas storage system for an automobile, comprising a porous organo-metallic complex formed by mixing a biphenyl dicarboxylic acid with a metal ion such as copper in a solvent, resulting in a frame work having a BET surface area of 50-1000 m²/g (p. 3, lines 20-49, p. 4, lines 12-16, p. 10, lines 30-33, p. 11, lines 11-14). The complex is used to reversibly store methane, ethane, propane, butane (known sources of hydrogen), or nitrogen (p. 4, lines 21-24). A device for storing the gas includes a container for holding the complex, an entrance/exit opening for allowing the gas to enter or exit the device, and a gas-tight maintaining mechanism capable of maintaining the gas under pressure as part of a fuel cell on board an automobile (figures, abstract, p. 2, lines 30-35).

7. Claims 11, 12 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by JP '572.

8. JP '572 teaches a gas storage system for an automobile, comprising a porous organo-metallic complex formed by mixing a bidentate organic ligand, such as 2,3-pyrazine carboxylic acid, with a metal ion such as copper in a solvent, resulting in a framework that can reversibly store methane, a known source of hydrogen. A device for storing the gas includes a container for holding the complex, an entrance/exit opening for allowing the gas to enter or exit the device, and a gas-tight maintaining mechanism capable of maintaining the gas under pressure as part of a fuel cell on board an automobile (abstract, machine translation paragraphs 9, 11, 13-15, 18, 20).

Allowable Subject Matter

9. Claims 1-6, 8-10 and 13-15 are allowed.

10. The following is an examiner's statement of reasons for allowance: The prior art of record fails to disclose or suggest a method or system as claimed wherein the metalo organic

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framework material comprising pores exhibits a specific surface area, as determined via adsorption (BET according to DIN 66131) of larger than 2000 m²/g.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

11. Applicant's arguments filed November 2, 2004 have been fully considered but they are not persuasive. The examiner agrees with applicant's argument that the methods and systems of Yaghi '508, EP '608, and JP '572 fail to disclose a surface area of larger than 2000 m²/g as recited in claim 1, however claim 11 does not contain any surface area limitation that distinguishes over the prior art. Therefore, the rejections of claims 1-6, 8-10 and 13-15 are withdrawn and those of claims 11, 12 and 16 are maintained and made final.

12. Applicant also argues that the Yaghi patent fails to disclose a method as described in claim 1. It is assumed that this argument is meant to apply to claim 11 as well. Yaghi discloses that the microporous solids "are useful for the adsorption of molecules or ions of impurities from liquids and gases," and that are useful in industries such as catalysis, gas purification (col. 1, lines 16-33, col. 3, line 60 to col. 4, line 4). It is submitted that this is sufficient disclosure of a known method of uptaking in a stationary or mobile application as recited in claim 11.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The patent to Yaghi et al (2004/0225134) discloses a high surface area metal-organic material but does not qualify as prior art.

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank M. Lawrence whose telephone number is 571-272-1161. The examiner can normally be reached on Mon-Thurs 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Frank M. Lawrence
Primary Examiner
Art Unit 1724

Frank Lawrence
12-13-04

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